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To: Miller, Garyg; Turner, Philip
Subject: San Jacinto Human Health Hazard Summary
Date: Friday, May 06, 2016 3:54:41 PM

Below are summary tables for recreational fisher exposure scenarios. The maximum hazard quotient associated with recreational fisher catfish consumption is 1.1.

North of I-10 and the Aquatic Environment Noncancer Hazards for a Recreational Fisher

Scenario Timeframe:	Baseline				
Receptor Population:	Recreational Fisher				
Receptor Age:	Young Child				
Calculation Assumption:	Reasonable Maximum Exposure				
		Noncancer Hazard Quotient			
Chemical[1]	**Primary Target Organ**	**Incidental Ingestion of Sediment**	**Dermal Contact with Sediment**	**Consumption of Fish or Shellfish[2]**	**Exposure Route Total**
Scenario 1A: Direct Exposure Beach Area A; Ingestion of Catfish from FCA 2/3					
TEQ_{DF}	Reproductive/Developmental	0.00023	0.0013	**1.1**	**1.1**
Methylmercury[3]	Reproductive/Developmental	--	--	0.27	0.27
				Reproductive/Developmental Endpoint-Specific Hazard Index	**1.4**
Scenario 2A: Direct Exposure Beach Area B/C; Ingestion of Catfish from FCA 2/3					
TEQ_{DF}	Reproductive/Developmental	0.0032	0.018	**1.1**	**1.1**
Methylmercury[3]	Reproductive/Developmental	--	--	0.27	0.27
				Reproductive/Developmental Endpoint-Specific Hazard Index	**1.4**
Scenario 3A: Direct Exposure Beach Area E; Ingestion of Catfish from FCA 2/3					
TEQ_{DF}	Reproductive/Developmental	**6.5**	**37**	**1.1**	**45**
Methylmercury[3]	Reproductive/Developmental	--	--	0.27	0.27
				Reproductive/Developmental Endpoint-Specific Hazard Index	**45**
PCBs	Immune	0.49	0.65	0.88	**2.0**
Inorganic Mercury[3]	Immune	0.0047	0.013	--	0.02
				Immune Endpoint-Specific Hazard Index	**2.0**
Scenario 3B: Direct Exposure Beach Area E; Ingestion of Clam from FCA 2					
TEQ_{DF}	Reproductive/Developmental	**6.5**	**37**	0.21	**44**
Methylmercury[3]	Reproductive/Developmental	--	--	0.0009	0.0009
				Reproductive/Developmental Endpoint-Specific Hazard Index	**44**
Scenario 3C: Direct Exposure Beach Area E; Ingestion of Crab from FCA 2/3					
TEQ_{DF}	Reproductive/Developmental	**6.5**	**37**	0.0032	**44**
Methylmercury[3]	Reproductive/Developmental	--	--	0.003	0.003

				Reproductive/Developmental Endpoint-Specific Hazard Index	**44**
Scenario 4A: Direct Exposure Beach Area D; Ingestion of Catfish from FCA 1					
TEQ_{DF}	Reproductive/Developmental	0.0011	0.006	1	**1.1**
Methylmercury[3]	Reproductive/Developmental	--	--	0.36	0.36
				Reproductive/Developmental Endpoint-Specific Hazard Index	**1.4**

Note:

[1] All chemicals with primary target organ exposure route totals greater than 1 are included in this table.

[2] See scenario title for identification of tissue consumed

[3] Consistent with EPA guidance (2010c), 100 percent of mercury detected in tissue was assumed to be methylmercury and 100 percent of mercury detected in soil and sediment was assumed to be inorganic mercury.

FCA – fish collection area

PCB – polychlorinated biphenyls

TEQ_{DF} – 2,3,7,8-tetrachlorodibenzo-p-dioxin toxicity equivalent quotient

North of I-10 and the Aquatic Environment Cancer Hazards for a Recreational Fisher

Scenario Timeframe:	Baseline
Receptor Population:	Recreational Fisher
Receptor Age:	Lifetime
Calculation Assumption:	Reasonable Maximum Exposure

	TEQ_{DF} Cancer Hazard Quotient[1]			
Chemical of Concern	**Incidental Ingestion of Sediment**	**Dermal Contact with Sediment**	**Consumption of Fish or Shellfish[2]**	**Total**
Scenario 3A: Direct Exposure Beach Area E; Ingestion of Catfish from FCA 2/3				
TEQ_{DF}	**2.0**	**11**	0.33	**14**
Scenario 3B: Direct Exposure Beach Area E; Ingestion of Clam from FCA 2				
TEQ_{DF}	**2.0**	**11**	0.065	**13**
Scenario 3C: Direct Exposure Beach Area E; Ingestion of Crab from FCA 2/3				
TEQ_{DF}	**2.0**	**11**	0.00098	**13**

Note:

[1] A threshold or minimum dose must be reached for TEQ_{DF} before a carcinogenic effect can occur. Therefore, the potential for cancer to occur as a result of the assumed exposure is estimated using a hazard metric like that described for noncancer hazards. For additional discussion regarding this topic see Integral and Anchor 2013b.

[2] See scenario title for identification of tissue consumed

FCA – fish collection area

TEQ_{DF} – 2,3,7,8-tetrachlorodibenzo-p-dioxin toxicity equivalent quotient

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